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Epidemic Influenza—San Francisco, 1940

By J. C. GEIGER, M.D., Director of Public Health, San Francisco

Influenza represents to the health official just an ordinary loose medical term. In other words, the clinical diagnosis and the subsequent reports when reported may be summed up usually as a senseless definition of a pathologic X. In usual times, however, or in times of increased mortality from respiratory infections beyond seasonal expectancies or at the time of the prevalence of great pandemics, influenza as a term becomes cloaked with immense importance from a clinical, pathologic and bacteriologic standpoint, and infinitely significant from a public health standpoint. The disease occurs in serious and furious epidemics and in great pandemics as an acute, highly communicable, febrile disease. As such it represents a high mortality rate on the whole. One should be very familiar with the 1918 outbreak in which it is estimated that over 200,000,000 cases and 10,000,000 deaths occurred in a period of twelve months, throughout the world. In the United States alone, there occurred 20,000,000 cases and 450,000 deaths. Influenza pandemics were not unknown in ancient medical history, for Willis and Sydenham described the first outbreak in 1510. In fact, eighty outbreaks have been recorded since 1173. Such pandemics create public health situations that even today rapidly become chaotic as to acceptable control measures or investigative procedures. Furthermore, the rapidity of spread and the rapidity of subsidence and the undoubted occurrence of interepidemic types makes the investigative problem a complicated, necessarily hurried and expensive one. Moreover, what relationship exists between pandemic and interepidemic influenza is most obscure. This obscurity extends likewise to the relationship of causative type viruses at both periods. Suffice to say that there is no unanimity of opinion and no light sufficiently clear, no matter how extensive or timely the investigation, or careful the investigator, has been thrown upon the origin of the virus or the possible modification or attenuation. It is an attractive hypothesis to assume, in order of importance, that the virus is widely distributed; that individual, and even racial susceptibility, plays an important role; and that the virulence of pandemic strains subside for years or become innocuous. Microbic or viric dissociation from a virulent to a nonvirulent status has been suggested as a possible explanation to certain vagaries in the epidemiology of communicable diseases, particularly that of epidemic cerebrospinal fever, but at present this is not quite susceptible of proof. The facility and frequence of the occurrence of influenza is, however, very manifest, as is its dual epidemiologic role of pandemic and interepidemics.

Since 1918 the public health official has only been concerned with interepidemic influenza. Apparently, this type of the disease may be considered a respira-

tory infection rapidly diffusing through and involving whole communities or occurring in sharply defined outbreaks in schools, colleges, institutions, etc.

Clinical identification of influenza is obviously difficult but not unattainable. Today, viric identification is at present possible even as to type, but not generally in active use. It is, however, on certain epidemiologic characteristics that identification can be based with any degree of certainty. The epidemiologic features en masse may be briefly stated to be its close relation of the curve of influenza to that of pneumonia; its high morbidity; its rapid dissemination over wide areas; its generally characteristic racial and age incidence and its dislocation of ordinary age distribution mortality of respiratory diseases with increase in young adults; its great explosiveness (the peak of the curve being reached in two or three weeks or an incidence curve of not more than four to eight weeks); its high dispersiveness (many widely scattered cities reaching the peak of the curve about the same time, for no disease spreads so rapidly in so short a time) and its recurrences.

The increased incidence in reported cases of influenza occurring within the last six weeks of 1940 was not entirely unexpected. It followed closely upon an outbreak in Hawaii in early autumn, although it was not until about November 15th that the disease made its anticipated appearance in this State.

The first noticeable increase occurred in San Francisco for the week ending November 30th when 358 cases were reported. This was an abrupt rise over the preceding week. The increase in the number of cases for the State was apparent about three weeks earlier, indicating that the disease had reached other centers of population first.

The total number of reported cases for the year in San Francisco was 2,399 with all but 57 being reported during the period of the epidemic. By the end of December it appeared that the epidemic was subsiding. The rates per 100,000 population indicate a slight rise in the State occurring in the first three months of the year. The record for San Francisco in this period apparently had no part in this increase. In the first eleven months of 1940, eleven deaths from influenza had occurred in San Francisco, three of which showed no pulmonary complications. During the period of the epidemic to the end of the year nine additional influenza deaths were recorded, only one of which showed no pulmonary complications. No records are available on the incidence of bronchopneumonia. Lobar pneumonia for 1940, with a total of 179 cases, reported about 120 fewer than in 1939, certainly a figure below any estimate that might have been anticipated during the progress of an influenza epidemic. Incomplete figures for 1940 on deaths from lobar pneumonia show 115 deaths prior to the outbreak of influenza in late November and 22 deaths during the remaining month of the year, a total of 137. This, too, is significantly lower than 169 lobar pneumonia deaths in 1939.

San Francisco experienced an outbreak of influenza during the early weeks of 1937, in which about 2,300 cases were reported. The increased reported incidence of the disease in 1937 as well as 1940, though incomplete and inaccurate, served as an index of value in predicting the course of the epidemic. In 1937, however, morbidity was definitely reflected in mortality, with significant elevation of rates for influenza, acute lobar pneumonia, bronchopneumonia, and heart disease, with the highest general mortality rates recorded in San Francisco since the pandemic of 1918-1919. In 1940 these rates were lower than in years of normal incidence.

As stated before, on November 23, 1940, the Department of Public Health noted a rather steady rise in the reporting of cases of influenza. Up to this date for the entire year only 57 cases had been reported. During the week ending November 30—358 cases were recorded. Daily reports since that time indicate that the peak of reporting occurred on December 7 with 330 cases. Since December 7 cases have steadily decreased.

No case reports on bronchopneumonia are available, but reported cases of lobar pneumonia have not exceeded the normal expectancy during this epidemic period and no deaths from influenzal pneumonia have occurred during that time.

In retrospect, San Francisco should offer thanks for the mildness of this disease and the lack of severe sequelae for there can be no prediction as to what form this disease will take. The Department of Public Health in San Francisco offered sound advice, but the rapidity of spread and the present lack of knowledge of preventive measures act as a positive deterrent to effective control. For instance, a new vaccine has been used against mostly exposed persons, as for instance in the San Francisco Hospital. This vaccine is made from chicken embryos by inoculating these with influenza virus plus the virus of distemper. Later it is treated with formalin to render it inactive. This should be used in outbreaks for experimental purposes.

It may be of interest to note that of the 116 persons vaccinated for influenza in the San Francisco Hospital, 21 were later off duty with upper respiratory infections. Of this number only three were considered clinical influenza. One of these persons reported off duty one day after receiving the vaccine

and remained home 13 days; one employee reported off duty two days after receiving the vaccine and remained home 13 days; one employee reported off duty two days after receiving the vaccine and remained off seven days, and one employee reported off duty 17 days after receiving the vaccine and remained off duty five days. It is interesting that the severity of the attack of influenza in the latter case was stated to be definitely reduced.

The laboratory test of the cases of influenza here and in other places, as Hawaii, indicate it to be a Type A. It is quite remarkable to note the mildness in this type in San Francisco. Naturally, reporting of cases was quite meager and only an estimate of the number of cases in San Francisco can be given. On the best information available it could be stated that 10 per cent of the population may have been affected during the course of this outbreak.

The tendency of epidemic diseases, is to fluctuate unseemingly, but usually maintaining a fixed seasonal basis. Epidemic influenza, however, stands alone, as it has spread at irregular intervals over wide areas, affecting large proportions of the population and presumably disregarding the climatic and seasonal conditions. The accumulation of population susceptibles is a doubtful factor since, ordinarily, individual immunity is considerably transient.

To scientific medicine and public health this disease offers a most intriguing clinical and laboratory problem of identification and control.

OLIVE OIL ADULTERATORS CHECKED

The lack of imported olive oil has created increased demand for the California product. The price of bulk oil has increased tremendously. The ease with which certain vegetable oils such as cottonseed, sesame and tea oil lend themselves to blending with olive oil makes this field a lucrative one for "bootleggers." Through the coordinated efforts of inspectors, several adulterators of olive oil were apprehended during January. In San Joaquin County a San Francisco firm had been selling unlabeled 5-gallon tins of a product verbally represented as olive oil. Analysis, however, shows it to be adulterated with cottonseed oil. Similar discrepancies were encountered in Santa Clara, Monterey, Yolo and other counties. Convictions in olive oil cases were obtained in Stockton, Courtland and Santa Monica.

VENEREAL CASE REPORTS

During January 2,004 cases of gonorrhea and 2,024 cases of syphilis were reported to the State Department of Public Health.

STATE TUBERCULOSIS ASSOCIATION TO MEET

The annual meeting of the California Tuberculosis Association will be held at Del Monte, April 3, 4 and 5. The theme of changing emphasis in tuberculosis programs is of particular importance to public health workers and the program of panel discussions on specific problem areas and present-day needs in public health regime have been carefully timed.

At one session, Dr. Bertram P. Brown, State Director of Public Health, will preside and Dr. Kendall Emerson, managing director of the National Tuberculosis Association will speak on "Unconquered Frontiers in Tuberculosis Work."

Tuberculosis will be discussed in relation to national defense and to present-day needs in industry. Appearing on this program will be George M. Uhl of the State Department of Health and a representative of the 9th Army Corps Area.

Dr. William P. Shepard, president of the Western Branch, American Public Health Association, will preside at the panel discussion on the place of the various members of the public health units and the community in the tuberculosis work.

The clinical section will hear papers and discussion by outstanding medical men in the field of tuberculosis and other chest diseases. Public health nurses will have a luncheon meeting on Friday, April 4th.

PURE DRUGS ACT

Among investigations made during January are the following: Investigation of hair preparations suspected of containing undeclared arsenic; a pamphlet containing cure-all properties for cactus juice; Chinese drug product which is essentially an alcoholic extract of a Chinese herb selling at $5 an ounce and which is recommended as a remedy for paralysis, rheumatism and minor ailments; an electrical device designed to generate ozone; faulty filling of prescriptions in a drug store through the omission of a certain prescribed product. The Bureau of Food and Drug Inspections conducted seven prosecutions throughout the State during January. Convictions were secured in each case, fines ranging from $25 to $250. Two prosecutions involved two counts each and fines in these cases were assessed in the amounts of $50 and $100 and $25 and $50, respectively.

POPCORN IN NONRETURNABLE CONTAINERS

Manufacturers of popcorn have joined with manufacturers of potato chips in making voluntary agreements to place their products in containers which are not returnable.

MORBIDITY

Complete Reports for Following Diseases for Week Ending February 15, 1941

Chickenpox

885 cases: Berkeley 8, Emeryville 2, Oakland 14, Gridley 1, Colusa County 1, Contra Costa County 1, Antioch 5, Pittsburg 1, Fresno County 13, Fresno 8, Sanger 9, Humboldt County 5, Eureka 16, Imperial County 1, Brawley 1, Kern County 22, Tehachapi 1, Lemoore 1, Los Angeles County 48, Burbank 6, Covina 1, El Segundo 10, Glendale 13, Huntington Park 6, Inglewood 12, Long Beach 7, Los Angeles 81, Pasadena 16, Pomona 3, San Fernando 1, Santa Monica 8, South Pasadena 1, Whittier 3, Lynwood 1, South Gate 17, Monterey Park 2, Bell 1, Madera County 2, Mill Valley 1, San Anselmo 1, Sausalito 1, Merced County 28, Modoc County 1, Alturas 2, Monterey County 4, Napa 8, Orange County 14, Anaheim 4, Fullerton 4, Huntington Beach 1, Orange 4, Santa Ana 11, La Habra 4, Riverside County 18, Corona 4, Riverside 28, Palm Springs 3, Sacramento 32, Ontario 1, San Bernardino 1, San Diego County 17, San Diego 64, San Francisco 144, San Joaquin County 22, Stockton 13, Paso Robles 1, San Luis Obispo 3, San Mateo County 1, Santa Barbara County 5, Santa Barbara 3, Santa Maria 2, Santa Clara County 10, Palo Alto 2, San Jose 9, Santa Cruz County 1, Shasta County 11, Siskiyou County 5, Yreka 21, Sonoma County 8, Sutter County 1, Tulare County 7, Exeter 2, Lindsay 1, Yolo County 2, Winters 2, Yuba County 4.

Diphtheria

21 cases: Oakland 1, Kern County 1, Lemoore 1, Los Angeles 2, Riverside 3, Sacramento 3, San Bernardino County 2, San Diego County 1, San Diego 1, San Francisco 2, San Joaquin County 3, Yolo County 1.

German Measles

224 cases: Alameda County 4, Alameda 2, Berkeley 3, Livermore 4, Oakland 3, Pleasanton 8, Kingsburg 1, Bakersfield 1, Lassen County 5, Susanville 11, Los Angeles County 11, Culver City 1, Glendale 1, Long Beach 35, Los Angeles 4, Pasadena 9, San Marino 1, South Pasadena 1, South Gate 1, Maywood 1, Monterey County 2, Pacific Grove 1, Anaheim 1, Santa Ana 2, Tustin 4, Banning 1, Elsinore 1, San Diego County 14, La Mesa 1, National City 5, Oceanside 1, San Diego 19, San Francisco 6, San Luis Obispo County 2, Palo Alto 1, Santa Cruz County 2, Shasta County 1, Vallejo 2, Sonoma County 2, Tulare County 1, Davis 1.

Influenza

1247 cases: Berkeley 1, Emeryville 1, Oakland 8, Oroville 1, Fresno County 1, El Centro 1, Kern County 267, Bakersfield 328, Los Angeles County 140, Compton 1, El Segundo 1, Long Beach 4, Los Angeles 64, Pasadena 1, Whittier 1, Lynwood 1, Riverside 2, San Francisco 12, Santa Clara County 1, San Jose 6, Sonoma County 3, Tulare County 22, Lindsay 33.

Measles

110 cases: Alameda 2, Berkeley 1, Emeryville 1, Oakland 3, Gridley 1, Placerville 1, Eureka 1, Calipatria 1, Kern County 13, Bakersfield 6, Lassen County 1, Alhambra 1, Long Beach 3, Los Angeles 4, South Pasadena 1, Merced County 1, Monterey 1, Salinas 2, Napa 2, Banning 1, San Diego County 1, La Mesa 1, San Francisco 2, San Luis Obispo 2, Santa Clara County 1, Santa Cruz 4, Shasta County 12, Siskiyou County 3, Solano County 3, Vacaville 1, Vallejo 3, Lindsay 2, Oxnard 1.

Mumps

332 cases: Berkeley 1, Oakland 9, Arcata 1, Eureka 2, Calipatria 1, Kern County 13, Delano 6, Los Angeles County 24, Compton 1, Culver City 1, El Segundo 2, Glendale 6, Huntington Park 3, Inglewood 2, Long Beach 4, Los Angeles 21, Pasadena 3, Pomona 11, San Fernando 1, Santa Monica 2, Whittier 3, Lynwood 1, South Gate 1, Maywood 2, San Anselmo 1, Sausalito 1, Grass Valley 6, Orange County 3, Huntington Beach 7, Santa Ana 1, La Habra 18, Riverside County 3, Corona 6, Riverside 4, Indio 8, Sacramento 1, San Bernardino County 2, San Diego County 3, La Mesa 5, San Diego 25, San Francisco 29, San Luis Obispo County 2, San Mateo County 1, San Mateo 4, Santa Clara County 1, San Jose 5, Shasta County 13, Solano County 8, Sonoma County 2, Tulare County 3, Ventura County 14, Oxnard 3, Ventura 2, Winters 22, Marysville 1.

Pneumonia (Lobar)

51 cases: Emeryville 1, Oakland 1, Fresno 2, Kern County 1, Los Angeles County 8, Compton 1, Glendale 1, Long Beach 1, Los Angeles 8, Pasadena 1, San Gabriel 1, Monterey County 1, Salinas 1, Riverside County 1, Riverside 1, San Bernardino County 1, Redlands 2, San Bernardino 1, San Diego County 3, La Mesa 1, National City 1, San Diego 2, San Francisco 5, San Mateo County 1, Shasta County 1, Sonoma County 1, Petaluma 1, Oxnard 1.

Scarlet Fever

152 cases: Berkeley 3, Gridley 1, Angels Camp 1, Antioch 1, Fresno County 11, Sanger 3, Eureka 1, Kern County 7, Bakersfield 2, Delano 1, Los Angeles County 13, Alhambra 1, Burbank 1, Compton 1, El Segundo 1, Huntington Park 1, Long Beach 1, Los Angeles 27, Monrovia 1, Montebello 1, Pomona 1, San Marino 1, Santa Monica 1, Whittier 1, South Gate 3, Maywood 1, Bell 1, Orange County 1, Santa Ana 1, La Habra 1, Plumas County 3, Riverside County 1, Corona 2, Indio 2, Sacramento 8, San Bernardino 1, San Diego County 1, Coronado 3, San Diego 6, San Francisco 13, San Joaquin County 2, Stockton 1, San Luis Obispo County 2, San Luis Obispo 2, Redwood City 1, Santa Cruz County 2, Shasta County 1, Lindsay 2, Porterville 1, Yolo County 6, California 1.*

Smallpox

No cases reported.

Typhoid Fever

3 cases: Imperial County 1, Los Angeles 1, Indio 1.

Whooping Cough

319 cases: Alameda County 1, Alameda 8, Berkeley 8, Oakland 19, Butte County 2, Contra Costa County 1, Concord 6, Fresno County 5, Orland 5, Imperial County 1, Calexico 1, Kern County 13, Los Angeles County 35, Alhambra 2, El Monte 1, Glendale 2, Long Beach 5, Los Angeles 16, Pasadena 26, Hawthorne 1, South Gate 2, Gardena 1, Madera County 1, San Anselmo 2, Monterey County 4, Orange County 3, Anaheim 2, Brea 2, Huntington Beach 4, Orange 13, Santa Ana 4, Seal Beach 4, La Habra 1, Laguna Beach 1, Corona 1, Riverside 1, Palm Springs 2, Sacramento 4, San Bernardino County 4, San Bernardino 1, San Diego County 1, San Diego 4, San Francisco 43, San Joaquin County 1, Lodi 4, Stockton 1, San Luis Obispo County 2, San Luis Obispo 6, San Mateo County 2, Burlingame 1, San Carlos 3, Santa Clara County 6, San Jose 1, Watsonville 1, Shasta County 5, Yreka 6, Sonoma County 7, Santa Rosa 1, Sutter County 1, Ventura County 2, Fillmore 1, Yolo County 3, Yuba County 2.

Dysentery (Amoebic)

2 cases: Chino, Ontario 1.

Dysentery (Bacillary)

4 cases: Los Angeles 1, Sonoma County 3.

Poliomyelitis

3 cases: Los Angeles County 1, Los Angeles 1, San Diego 1.

Tetanus

2 cases: Fresno County 1, Pasadena 1.

Trachoma

One case: Riverside County.

Trichinosis

4 cases: Oakland 3, Eureka 1.

Food Poisoning

22 cases: Oakland 6, San Francisco 16.

Undulant Fever

5 cases: Kern County 2, Los Angeles County 1, Riverside County 1, San Bernardino 1.

Coccidioidal Granuloma

2 cases: Berkeley 1, Kern County 1.

Septic Sore Throat

4 cases: Angels Camp 1, Long Beach 1, Santa Barbara County 2.

Epilepsy

30 cases: Oakland 3, Fresno County 1, Los Angeles County 1, Los Angeles 16, Monrovia 1, Sacramento 1, San Bernardino County 1, Rialto 1, San Francisco 3, Sonoma County 2.

Epidemic Diarrhea of the Newborn

7 cases: Los Angeles.

Rabies (Animal)

9 cases: Imperial County 1, El Centro 1, Los Angeles County 1, San Diego 5, Daly City 1.

* Cases charged to "California" represent patients ill before entering the State or those who contracted their illness traveling about the State throughout the incubation period of the disease. These cases are not chargeable to any one locality.

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